MODIFICATION RECOMMENDATION FORM

MPID 247 – DS3 Clarification on the Post Fault Active Power Recovery

RECOMMENDATION TO CER BY EIRGRID OF MODIFICATION TO GRID CODE.

ABSTRACT / TITLE OF MODIFICATION	DS3 Clarification on the Post Fault Active Power Recovery
MODIFICATION NUMBER	MPID 247
RECOMMENDED AT GCRP MEETING NUMBER	GCRP #38
LIST OF GRID CODE SECTION(S) AFFECTED BY PROPOSED MODIFICATION:	WFPS1.4.2
CURRENT GRID CODE VERSION :	5
MODIFICATION DESCRIPTION Overview **THE REASON FOR THE RECOMMENDED MODIFICATION**	The DS3 Grid Code modifications updated the Fault Ride-Through standards for WFPS. The new standards specify both active and reactive power responses from the WFPS and clause WFPS1.4.2 specifies the requirements for this. WFPS1.4.2 subsection (b) requires the WFPS to provide 90% of its active power within 500 ms. The clause currently states that 90% of the Available Active Power should be provided however the intent is that 90% of the pre-fault Active Power should be provided. This point becomes important if the WFPS is in Active Power Control mode and is dispatched below the Available Active Power. This modification aims to clarify this point. Below please view both the red-line version (new text is highlighted in blue) and green-line version of the text being proposed.
History of Progression through GCRPs, Working Group and/or Consultation	MPID 247 was presented to the members at the GCRP meeting #38 held in Belfast on 12/02/2014. The proposal was agreed in principle, however the Renewable Generator Representative on the panel requested an opportunity to discuss the modification with their OEMs and IWEA before a recommendation was sent to the CER. EirGrid also made a commitment to carry out a review of data (system fault records).

Summary Note of any Objections to the Recommended change from GCRP Members or Consultation Responses	The Renewable Generator Representative on the panel raised concerns that the modification may require updates from OEMs to implement. An action was taken by the member to consult with their OEMs and IWEA to seek clarity on the issue. The TSO also took an action to review recent fault records to determine if windfarms returned to their pre-fault active power after the fault was cleared.
Outcome of any GCRP Meeting Actions Relating to the Recommended Modification	A review of several system fault records demonstrated that the windfarms returned to their pre-fault active power after the fault was cleared. Although only a select number of faults were investigated it did not indicate that this response would be problematic. The Renewable Generator Representative confirmed that following consultation with their OEMs that windfarms should behave in a manner that is in line with the proposed modification. No objections were put forward by IWEA to the modification. The Renewable Generator Representative confirmed that the modification could be submitted to the CER for review.
Implication of not implementing the Modification	This modification aims to provide clarity to WFPS around the post fault active power recovery that is expected. At present the modification allows for 90% of Available Active Power to be provided however the TSO would only wish for 90% of the pre-fault Active Power to be provided post fault. The proposal is therefore to insert text to clarify this. Without this clarification WFPS may provide an Active Power response that is in excess of what is expected and this may result in instability issues on the system.

Red-line Version:

WFPS1.4.2 In addition to remaining connected to the **Transmission System**, the **Controllable WFPS** shall have the technical capability to provide the following functions:

a) During **Transmission System Voltage Dips,** the **Controllable WFPS** shall provide **Active Power** in proportion to retained **Voltage** and provide reactive current to the **Transmission System**, as set out in WFPS1.4.2(c)**.**. The provision of reactive current shall continue until the **Transmission System Voltage** recovers to within the normal operational range of the **Transmission System** as specified in CC8.3.1, or for at least 500 ms, whichever is the sooner. The **Controllable WFPS** may use all or any available reactive sources, including installed statcoms or SVCs, when providing reactive support during **Transmission System Fault Disturbances** which result in **Voltage Dips**.

b) The **Controllable WFPS** shall provide at least 90 % of its maximum **Available Active Power** or **Active Power Set-point**, whichever is lesser, as quickly as the technology allows and in any event within 500 ms of the **Transmission System Voltage** recovering to 90% of nominal **Voltage**, for **Fault Disturbances** cleared within 140 ms. For longer duration **Fault Disturbances**, the **Controllable WFPS** shall provide at least 90% of its maximum **Available Active Power** or **Active Power Set-point**, whichever is lesser, within 1 second of the **Transmission System Voltage** recovering to 90% of the nominal **Voltage**.

Green-line Version:

WFPS1.4.2 In addition to remaining connected to the **Transmission System**, the **Controllable WFPS** shall have the technical capability to provide the following functions:

a) During **Transmission System Voltage Dips,** the **Controllable WFPS** shall provide **Active Power** in proportion to retained **Voltage** and provide reactive current to the **Transmission System**, as set out in WFPS1.4.2(c)**.**. The provision of reactive current shall continue until the **Transmission System Voltage** recovers to within the normal operational range of the **Transmission System** as specified in CC8.3.1, or for at least 500 ms, whichever is the sooner. The **Controllable WFPS** may use all or any available reactive sources, including installed statcoms or SVCs, when providing reactive support during **Transmission System Fault Disturbances** which result in **Voltage Dips**.

b) The **Controllable WFPS** shall provide at least 90 % of its maximum **Available Active Power** or **Active Power Set-point**, whichever is lesser, as quickly as the technology allows and in any event within 500 ms of the **Transmission System Voltage** recovering to 90% of nominal **Voltage**, for **Fault Disturbances** cleared within 140 ms. For longer duration **Fault Disturbances**, the **Controllable WFPS** shall provide at least 90% of its maximum **Available Active Power** or **Active Power Set-point**, whichever is lesser, within 1 second of the **Transmission System Voltage** recovering to 90% of the nominal **Voltage**.